Region X 2021 SOP Study Guide for EMTs

Part 2

Advocate Condell EMS System

1. Adult Routine Trauma Care
    a. Scene size up
        i. Standard precautions
        ii. Scene hazards
        iii. MOI
        iv. Number of patients
        v. Need for additional resources
    b. Initial assessment/primary survey
        i. Airway/spinal precaution
        ii. Breathing
        iii. Circulation/hemorrhage management
        iv. AVPU and GCS
        v. Management of immediate life threats/airway management
            1. Control Bleeding
    c. Identify priority of transport
        i. SINGLE SYSTEM TRAUMA
            1. Focused exam
                a. Examine areas where trauma expected based on MOI, patient complaint
            2. History
            3. Vitals, pain scale, neuro exam, glucose
            4. Injury management
                a. Airway
                b. Package patient
                c. Transport
            5. Perform detailed exam/secondary survey as time permits en route
            6. Ongoing assessment as patient condition indicates
        ii. COMPLEX MULTISYSTEM TRAUMA
            1. Rapid trauma assessment
                a. Continue management of life threats
                b. Examine head, neck, chest, abdomen, pelvis, extremities, back
            2. History
            3. Vitals, pulse ox and capnography, pain scale, neuro exam, glucose
            4. Package patient
            5. Transport
            6. Perform detailed exam/secondary survey as time permits en route
            7. Ongoing assessment every 5 minutes
    d. Contact medical control, abbreviated report may be appropriate for rapid transport patients, category 1 trauma patients

2. Region X Field trauma triage and transport criteria
    a. Traumatic Arrest- transport to closest Trauma Center
    b. No Airway- Transport to closest comprehensive emergency department
    c. Hypotensive Trauma patient- highest trauma center within 25 minutes transport time
    d. Category 1 (unstable vitals, GCS <13/anatomic criteria)- Highest trauma center within 25 minutes transport time
    e. Category 2 (MOI: High risk auto crash, falls, other)- Transport to closest trauma center
    f. Special Considerations (Age, Anticoagulation/bleeding disorder, Burns, Pregnancy $\geq$ 20 weeks, EMS Provider judgement)- Transport to closest trauma center
3. Adult burns
    a. Adult routine trauma care
    b. Assess for airway compromise, and consider airway management
    c. Evaluate depth and estimate extent using Rule of Nines
    d. THERMAL
        i. SUPERFICIAL
            1. Cool with water or saline
            2. Apply sterile saline soaked dressings
            3. Do not over cool major burns or apply ice directly to burned area
        ii. PARTIAL OR FULL THICKNESS
            1. Cover with dry sterile dressings
    e. ELECTRICAL/LIGHTNING
        i. Monitor cardiac rhythm and vital signs
        ii. Identify and document any entrance and exit wounds
        iii. Assess neurovascular status of affected part
        iv. Immobilize affected part
        v. Cover wounds with dry sterile dressings
    f. CHEMICAL
        i. Haz/mat protocol
        ii. Brush away excess powdered chemical
        iii. Remove clothing if necessary
        iv. Flush burn area with sterile water or saline
        v. Assist patient with contact lens and irrigate eye with saline or sterile water
            1. Do not contaminate uninjured eye with irrigation from affected eye
4. Musculoskeletal/extremity trauma
    a. Adult routine trauma care
    b. Evaluate for deformity, shortening, rotation, or instability
    c. Evaluate neurologic status of extremity
    d. Evaluate vascular status
    e. Manage bleeding
        i. Apply direct pressure
        ii. Apply tourniquet
        iii. Pack wound tightly and apply direct pressure if unable to apply tourniquet
    f. Stabilize suspected fractures/dislocations
5. Blast injuries

a. Ensure scene safety
b. Remove patient from scene as soon as practical and safe
c. Airway management
d. Hemorrhage management
e. Adult routine trauma care
f. Evaluate for
    i. Blunt/penetrating trauma
    ii. Crush injury
    iii. Burns
    iv. Barotrauma
    v. Toxic chemical contamination
    vi. Radiation injury

6. Adult Head/spinal/facial injuries
    a. Obtain blood glucose level
        i. If less than 60
            1. Glucagon 1mg IM/IN
    b. If rapid neuro deterioration (unequal pupils, extensor posturing, lateralizing signs), ventilate with BVM at 1 breath every 5-6 seconds
        i. Ventilate patient guided by capnography to aim for ETCO2 of 35-40 when there is perfusing rhythm
7. Suspected Elder abuse
    a. Adult abuse: mistreatment to any resident age 18-59 living with a disability and any adult 60 years or older who live in a domestic setting

8. Emergency Childbirth
    a. LABOR
        i. Obtain history
        ii. Initiate Adult routine medical care
        iii. Position patient and evaluate for signs of
            1. Imminent delivery
            2. Complications
        iv. If delivery not imminent, transport patient on her left side
    b. DELIVERY
        i. Open OB pack and don sterile gloves.
        ii. Prepare to assist delivery
        iii. Protect perineum with gentle hand pressure while supporting newborn's head as it emerges. Tear amniotic membrane if it is still intact.
        iv. Check for nuchal cord
        v. Facilitate delivery of upper shoulder.
        vi. Note time of delivery and record on PCR
    c. NEWBORN AND POST PARTUM CARE
        i. Assess for spontaneous respirations
        ii. Suctioning with bulb syringe should be reserved only for newborn with obvious obstruction to spontaneous breathing

iii. Obtain 1 minute APGAR score
iv. Delay cord clamping at least 1-3 minutes, cut between 2 clamps placed 8 inches away from newborn's navel, 2 inches apart.
v. Continue to dry and keep newborn warm.
vi. Obtain 5 minute APGAR score, and at 5 minute intervals thereafter until 20 minutes for infants with a score less than 7
vii. Allow placenta to deliver
viii. Check perineum for tears, if bleeding, apply direct pressure with sanitary pads
ix. Observe for excessive vaginal bleeding (>500ml)
x. Massage fundus until firm, check every 5 minutes and massage as necessary
xi. Utilize ID tags for mother and newborn
xii. Transport infant in a secured seat/device unless resuscitation is needed.

9. Delivery complications
    a. Administer high-flow oxygen to mother
    b. BREECH BIRTH
        i. Support baby's body as soon as legs are delivered. Palpate umbilical cord frequently for pulsations
        ii. After torso and shoulders are delivered, gently sweep down arms.
            1. Never attempt to pull the infant by the legs or trunk.
        iii. Head should deliver in 30 seconds.
            1. If not, reach 2 gloved fingers in the shape of a "V" into the vagina with the palm facing the newborn's face to locate the mouth and nose.
            2. Push the vaginal wall away from the newborn's face to maintain an airway
            3. Keep fingers in place and transport, alerting receiving hospital. Keep delivered part of body warm and dry.
            4. If head delivers, anticipate neonatal distress and maternal hemorrhage
    c. PROLAPSED CORD
        i. Elevate mother's hips
        ii. Transport with had in vagina between pubic bone and presenting part with cord between two fingers to monitor cord pulsations and exert counter pressure on presenting part.
        iii. Cover exposed cord with moist dressing and keep warm
    d. NUCHAL CORD
        i. Slip two fingers around cord and lift over newborn's head. Proceed with delivery
        ii. If unsuccessful, attempt to slide cord over shoulders
        iii. If unsuccessful, double clamp cord, cut between clamps with sterile scissors to allow for release of cord from neck.
        iv. Proceed with delivery
    e. SHOULDER DYSTOCIA
        i. Place mother in McRobert's position. Hyperflex hips to severe supine knee-chest position
        ii. Apply firm suprapubic pressure to attempt to dislodge shoulder

10. RESUSCITATION OF THE NEWBORN/NEONATE
    a. Assess airway
    b. Assess pulse
    c. Dry baby and keep warm, stimulate
    d. Suction mouth and nose with bulb syringe only if there is obvious obstruction to spontaneous breathing or significant respiratory distress
    e. APNEA OR HEART RATE <100
        i. Positive pressure ventilation via BVM at 40-60/minute on room air
    f. IF PULSE <60
        i. Begin chest compressions at ration of 3 compressions to 1 ventilation
    g. Reevaluate every 30 seconds
11. Obstetrical complications
    a. BLEEDING IN PREGNANCY
        i. Placenta previa, placenta abruptio, threatened miscarriage, ectopic
        ii. Position mother on left side if possible
        iii. Note type, color, and amount of bleeding and/or discharge. If tissue passes, collect and transport to hospital with patient
    b. HYPERTENSIVE DISORDERS IN PREGNANCY
        i. Eclampsia and pre-eclampsia
        ii. Gentle handling, minimal CNS stimulation
        iii. Position on left side if possible
        iv. Seizure precautions and secure airway
    c. MATERNAL RESUSCITATION MODIFICATIONS
        i. Perform left uterine displacement while the patient is in the supine position.
        ii. Chest compressions should be performed slightly higher on the sternum than normal
12. Routine Pediatric Medical/Trauma Care
    a. Patients under the age of 16 are considered pediatric
    b. GENERAL ASSESSMENT USING PEDIATRIC ASSESSMENT TRIANGLE
        i. Appearance
        ii. Work of breathing
        iii. Circulation to skin
    c. INITIAL ASSESSMENT
        i. Airway
        ii. Breathing
        iii. Circulation
        iv. AVPU
        v. Expose and examine
    d. IDENTIFY PRIORITY PATIENTS AND MAKE TRANSPORT DECISION
    e. ADDITIONAL ASSESSMENT
    f. DETAILED PHYSICAL EXAM
    g. CONTACT MEDICAL CONTROL
    h. TRANSPORT TO CLOSEST APPROPRIATE FACILITY
13. Pediatric Airway Management

a. Routine pediatric medical/trauma care
b. BVM ventilation with adjuncts
c. Evaluate for BVM effectiveness
    i. If ineffective, and no gag reflex present, insert I-gel

14. Pediatric bradyarrhythmias
    a. If HR <60/min and poor perfusion despite oxygenation and ventilation
        i. Begin CPR with compression
        ii. Monitor with continuous capnography
15. Pediatric Asthma
    a. Pediatric routine medical care
    b. Mild to moderate distress
        i. Supplemental oxygen
        ii. Position of comfort
        iii. Albuterol 2.5mg mixed with Ipratropium (Atrovent) 0.5mg (DUONEB) neb treatment with oxygen flow of 6 liters/minute
            1. May repeat x 1
        iv. If no improvement, administer Albuterol 2.5mg/3ml Neb treatment, may repeat every 5 minutes
        v. Contact MEDICAL CONTROL to consider Epinephrine 1mg/ml 0.3mg IM in anterolateral thigh
    c. Severe Distress
        i. Consider airway management, ventilate with 100% oxygen via BVM
        ii. Albuterol 2.5mg mixed with Ipratropium (Atrovent) 0.5mg (DUONEB) neb treatment with oxygen flow of 6 liters/minute
        iii. Epinephrine 1mg/ml 0.01mg/kg IM (adult max 0.3mg)
16. Pediatric croup/epiglottitis
    a. Keep patient calm, do not agitate
    b. Provide emotional support and allow position of comfort
    c. CROUP (Infant/toddler, low grade fever, barking cough)
        i. Stable (no cyanosis, good air exchange)
            1. Humidified oxygen
        ii. Unstable (resting stridor, respiratory distress)
            1. Attempt ventilation with BVM and supplemental oxygen
            2. Consider pediatric airway management
    d. EPIGLOTTITIS (Toddler, high fever, drooling, no cough, stridor)
        i. Humidified oxygen
        ii. If condition deteriorates, attempt ventilation with BVM and oxygen, one breath every 3-5 seconds
        iii. Consider pediatric airway management
17. Pediatric respiratory failure
    a. Distress
        i. Increased work of breathing, increased respiratory rate, use of accessory muscles, nasal flaring, effectively compensating
        ii. Supplemental oxygen

iii. Support head in neutral position
iv. Keep child calm, allow caregiver access to child

b. Failure
i. Exhausted energy reserves, low oxygenation and ventilation, low RR, decreased effort, usually with bradycardia, agitation, or lethargy and cyanosis
ii. Open airway, ventilate with 100% oxygen via BVM 1 breath every 3-5 seconds
iii. Monitor with continuous capnography

18. Pediatric allergic reaction/anaphylaxis
a. Routine pediatric care
b. STABLE ALLERGIC REACTION
i. Including hives, itching, rash, GI distress. Patient alert, skin warm and dry
ii. Apply ice/cold pack to site
c. STABLE ALLERGIC REACTION WITH AIRWAY INVOLVEMENT
i. Epinephrine 1mg/ml 0.01mg/kg IM (to maximum 0.3mg per single dose)
ii. Or EPIPEN
iii. If wheezing, DUONEB (may repeat x 1)
iv. If no improvement, Albuterol neb every 5 minutes
d. UNSTABLE ANAPHYLACTIC SHOCK
i. Secure airway
ii. Epinephrine 1mg/ml 0.01mg/kg IM (to maximum 0.3mg per single dose)
iii. Or EPIPEN
iv. If wheezing, DUONEB
v. If no improvement, Albuterol neb every 5 minutes

19. Pediatric Altered mental status/syncope/pre-syncope
a. Obtain blood glucose and record
i. If less than 60
1. Oral Glucose gel 15G if able to tolerate PO intake, 2 or older, has gag reflex and can protect own airway
2. If unable to give PO,
a. Glucagon 0.5mg IM/IN if <20kg or <5y/o
b. Glucagon 1mg IM/IN if $\geq$20kg or $\geq$5 y/o
b. If patient is not alert, respirations are decreased, or narcotic overdose suspected:
i. Naloxone 0.1mg/kg IN/IM, maximum of 2mg

20. Pediatric Brief Resolved Unexplained Event/Apparent Life Threatening Event (BRUE/ALTE)
a. May be a resolved event in an infant <1 year including:
i. Absent, decreased or irregular breathing
ii. Color change
iii. Marked change in muscle tone
iv. Altered level of responsiveness
b. Transport for medical evaluation, even the well-appearing child
c. If transport is refused, contact medical control

21. Pediatric Seizures
a. Pediatric routine medical care
b. Protect patient from Injury

c. Vomiting/aspiration precautions
d. Do NOT place anything in mouth if actively seizing
e. Obtain blood glucose
    i. If less than 60
        1. Glucagon 0.5mg IM/IN if <20kg or <5y/o
        2. Glucagon 1mg IM/IN if ≥20kg or ≥5 y/o
f. FEBRILE SEIZURES
    i. Cool patient by removing clothing
    ii. Consider placing towels moistened in tepid water over patient and fan
    iii. Do not induce shivering
    iv. Do not rub down with alcohol or place in ice water bath
    v. Nothing by mouth

22. Pediatric burns
    a. Pediatric routine trauma care
    b. Assess for respiratory compromise, and consider airway management
    c. Evaluate depth and estimate extent using Rule of Nines
    d. THERMAL
        i. SUPERFICIAL
            1. Cool with water or saline
            2. Apply sterile saline soaked dressings
            3. Do not over cool major burns or apply ice directly to burned area
        ii. PARTIAL OR FULL THICKNESS
            1. Cover with dry sterile dressings
    e. ELECTRICAL/LIGHTNING
        i. Monitor cardiac rhythm and vital signs
        ii. Identify and document any entrance and exit wounds
        iii. Assess neurovascular status of affected part
        iv. Immobilize affected part
        v. Cover wounds with dry sterile dressings
    f. CHEMICAL
        i. Haz/mat protocol
        ii. Brush away excess powdered chemical
        iii. Remove clothing if necessary
        iv. Flush burn area with sterile water or saline
        v. Assist patient with contact lens and irrigate eye with saline or sterile water
            1. Do not contaminate uninjured eye with irrigation from affected eye
23. Pediatric Head/Spinal/Facial injuries
    a. Support ventilation, administer 100% oxygen as indicated
    b. ventilate with BVM at 1 breath every 5-6 seconds
        i. Ventilate patient guided by capnography to aim for ETCO2 of 35 when there is perfusing rhythm
    c. Obtain blood glucose level
        i. If less than 60
            1. Glucagon 0.5mg IM/IN if <20kg or <5y/o

2. Glucagon 1mg IM/IN if ≥20kg or ≥5 y/o

24. Pediatric drowning
    a. Spinal motion restriction as indicated
    b. 100% oxygen
    c. Contact medical control to consider CPAP if difficulty breathing
    d. STABLE
        i. Awake, alert, normal respirations
        ii. Monitor
    e. UNSTABLE
        i. Abnormal respirations, altered mental status
        ii. Assist ventilations via BVM
            1. 1 breath every 3-5 seconds
        iii. Assess for hypothermia
25. Pediatric heat emergencies
    a. Pediatric routine medical care
    b. Move to cool environment
    c. Remove as much clothing as necessary to facilitate cooling
    d. CRAMPS
        i. Normal level of consciousness
        ii. Muscle cramps or spasms
    e. EXHAUSTION
        i. Possible AMS, perspiring, weakness, fatigue, frontal headache, nausea/vomiting, dizziness, syncope, temp may be elevated
    f. STROKE
        i. AMS, flushing, hot skin (dry or moist), weak, thready pulse
        ii. Initiate rapid cooling
            1. Douse towels or sheets with cool water, place on patient, fan body
            2. Cold packs to neck, axilla, and groin
            3. Stop cooling if shivering occurs
26. Pediatric hypothermia/cold emergencies
    a. FROSTBITE
        i. Move to warm environment
        ii. Rapidly re-warm frozen areas with warm water, hot packs in towels
        iii. Handle skin like a burn
            1. Light, dry, sterile dressings
            2. Elevate and immobilize
            3. Do not let affected skin surfaces rub together
    b. SYSTEMIC HYPOTHERMIA
        i. Avoid rough handling and excess activity
        ii. Apply heat packs to axilla, groin, neck and thorax
27. Pediatric toxic exposures/ingestions
    a. Assess scene safety
    b. Routine pediatric medical care
    c. Contact medical control for interventions as indicated for identified exposure

d. Bring container of drug or substance providing it does not pose safety risk